DETAILED ACTION

In view of the Appeal Brief filed on 05/20/2011, PROSECUTION IS HEREBY REOPENED. A non-final rejection of the claims has been set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below.

Election/Restrictions

1. **Claims 1, 5-8, 10, 14, 22 and 23** are drawn to the elected species 8, illustrated in Fig. 6B.

2. **Claims 2, 3, 11-13 and 15-21** are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to, at least, nonelected Figures 5B, 5C and/or 5D, there being no allowable generic or linking claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. **Claims 1, 5, 8, 10, 14 and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Sims, III et al (US 7,058,852)** in view of **Takahashi (2004/0057357).**

Regarding claims 1 and 8,

Sims teaches a device for recording information in blocks having logical addresses, the device comprising:

A recording unit **("351" in figure 3)** for recording marks in a track on a record carrier representing the information,

A controller **(see processor "312" in figure 3)** for controlling the recording by locating each block at a physical address in the track, the controller comprising

addressing means for translating the logical addresses into the physical addresses and vice versa in dependence of defect management information **(column 9:44-47 teaches mapping physical addresses to logical addresses, while column 12:4-7 teaches conversion of logical address to physical address)**,

defect management means for detecting track defects and maintaining the defect management information in defect management areas on the record carrier **(see discussion of primary and secondary defect lists in column 3:52-55, and column**

4:11-15), the defect management information including assignment information indicative of assignment of physical addresses in first parts of the track to at least one user data area, and assignment of physical addresses in second parts of the track to defect management areas **(column 12, lines 31-41),** and the defect management information including remapping information indicative for translating a logical address initially mapped to a physical address exhibiting a defect to an alternate physical address in a defect management area **(column 4, lines 11-15),** and

assignment means for adapting the assignment information depending on a detected defect, detected during recording **(column 4, lines 47-55 teaches that the defect list i.e., "assignment means", includes a sorting feature whereby the nearest available space may be found for replacement i.e., "for adapting the assignment information depending on a detected defect, detected during recording");** and Sims also teaches a defect management area having a starting physical address near the detected defect **(see discussion of "DMA" in column 13:47-58, which is on the disk and is therefore "near" the detected defect, as broadly claimed).**

Sims fails to expressly teach that when a defect is detected during recording, a new defect management area is created having a starting physical address near the detected defect, wherein the new defect management area is preceded by a user data area.

TAKAHASHI teaches **in Figure 7 and discusses in [0043] and [0044],** a DMA sequence method wherein several DMA areas are allocated (DMA0 to DMAn), however, only a single DMA is active at a time. [0043] teaches that "If DMA0 is a currently active DMA, DMA1 to DMAn are auxiliary DMAs." [0044] teaches that "In an initial state,

DMA0 is used, and DMA1 and subsequent DMAs *are not used.*" These specific disclosures are interpreted as teaching that when DMA0 is in use, each of DMA1 to DMAn is allocated, but **unused** areas i.e., have no data therein. Absent data, DMA1 to DMAn have not yet been "created". [0044] further teaches that when area DMA0 is in use, and when the number of defects detected with DMA0 are such that DMA0 is considered weakened **(see [0036] and its discussion of a weakened DMA area due to the number of detected defects during a recording operation)** the DMA0 area becomes unused and information stored in DMA0 is recorded in DMA1, thus effectively "creating" DMA1 by recording data within that area. Therefore, Takahashi teaches creating a new defect management area **(subsequently used areas DMA1 to DMAn)** having a starting physical address near the detected defect **(figure 7 shows that a subsequently used DMA is adjacent to a previously active DMA and therefore "near" the detected defect)**, wherein the new defect management area is preceded by a user data area **([0034] teaches that it is well known in the art to include DMA areas located in the inner and outer peripheries of a disk).**

At the time of the invention, it would have been obvious for one of ordinary skill in the art to modify Sims, per the teachings of Takahashi, creating supplemental defect management areas **(DMA1 to DMAn)** in Sims when an active DMA is detected as being "weak" during a recording operation, since the creation of a new DMA area will improve the fault tolerance of the DMAs and will decrease the likelihood of error correction failure.

Regarding claim 5,

Sims teaches that the defect management area includes a range of physical address in a part of the track originally assigned to the at least one user data area, the part of the track being a free space in the user data area **(Figure 2 of Sims illustrates that the same area used for recording user data, may be allocated as a defect management area when a defect is detected).**

Regarding claim 10 and 14,

Takahashi teaches the device as claimed in claims 1 and 8, wherein the defect management area starts at a location of the detected defect **(see Figure 1, as broadly claimed).**

Regarding claim 22,

Takahashi teaches that the new defect management area **(Fig. 2 shows DMA0)** is followed by a free area, said free area being an area free to be assigned as a new defect management area **(see "DMA1" through "DMA n" per [0036]).**

4. **Claims 1, 5-8 and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ohata (U.S. 6,469,978)** in view of **Tokumitsu (Pub. No. US 2002/0150009)** and **Takahashi (2004/0057357).**

Regarding claims 1 and 8,

Ohata teaches a device for recording information in blocks having logical addresses, the device comprising:

a recording unit **("3" in figure 13)** for recording marks in a track on a record carrier representing the information,

a controller **(8 in figure 13)** for controlling the recording by locating each block at a physical address in the track, the controller comprising

An addressing unit **(6 in figure 13)** for translating the logical addresses into the physical addresses and vice versa in dependence of defect management information **(column 10:19-24)**,

A defect management unit **("4" in figure 13),** for detecting defects and maintaining the defect management information in defect management areas on the record carrier **(column 10:29-41),**

the defect management information including assignment information indicative of assignment of physical addresses in first parts of the track to at least one user data area **(column 7:64-column 8:5, emphasis on line 5 of column 8; also column 10:29-34, emphasis on lines 33-34),** and assignment of physical addresses in second parts of the track to defect management areas **(column 7:52-63; figure 2; also column 10:35-37),** and the defect management information including remapping information indicative for translating a logical address initially mapped to a physical address exhibiting a defect to an alternate physical address in a defect management area **(column 8:29-36; also column 10:44-47 which discloses mapping logical address to physical address),** and

an assignment unit **(combined operations of "6" + "7" in figure 13**) for adapting the assignment information.

Ohata does not expressly teach that assignment information is adapted depending on a detected defect, detected during recording.

TOKUMITSU teaches, in **paragraph [0002],** assigning an alternative block i.e., adapting assignment information, for recording therein when a defective block is detected during the recording operation.

It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Ohata and Tokumitsu, such that assignment information is adapted when a defective block is detected during the recording operation, thereby recording in an alternative block i.e., when a defective block is detected during the recording operation.

Ohata teaches in figure 11, that the disk structure includes DMA areas. Ohata, modified by Tokumitsu, fails to expressly teach that when a defect is detected during recording, a new defect management area is created having a starting physical address near the detected defect, wherein the new defect management area is preceded by a user data area.

TAKAHASHI teaches **in Figure 7 and discusses in [0043] and [0044],** a DMA sequence method wherein several DMA areas are allocated (DMA0 to DMAn), however, only a single DMA is active at a time. [0043] teaches that "If DMA0 is a currently active DMA, DMA1 to DMAn are auxiliary DMAs." [0044] teaches that "In an initial state, DMA0 is used, and DMA1 and subsequent DMAs *are not used.*" These specific disclosures are interpreted as teaching that when DMA0 is in use, each of DMA1 to DMAn is allocated, but **unused** areas i.e., have no data therein. Absent data, DMA1 to

DMAn have not yet been "created". [0044] further teaches that when area DMA0 is in use, and when the number of defects detected with DMA0 are such that DMA0 is considered weakened **(see [0036] and its discussion of a weakened DMA area due to the number of detected defects during a recording operation)** the DMA0 area becomes unused and information stored in DMA0 is recorded in DMA1, thus effectively "creating" DMA1 by recording data within that area. Therefore, Takahashi teaches creating a new defect management area **(subsequently used areas DMA1 to DMAn)** having a starting physical address near the detected defect **(figure 7 shows that a subsequently used DMA is adjacent to a previously active DMA and therefore "near" the detected defect)**, wherein the new defect management area is preceded by a user data area **([0034] teaches that it is well known in the art to include DMA areas located in the inner and outer peripheries of a disk).**

At the time of the invention, it would have been obvious for one of ordinary skill in the art to further modify Ohata, per the teachings of Takahashi, creating supplemental defect management areas **(DMA1 to DMAn)** in Ohata when an active DMA is detected as being "weak" i.e., excessive defects detected during a recording operation, since the creation of a new DMA area will improve the fault tolerance of the DMAs and will decrease the likelihood of error correction failure.

Regarding claim 5,

Ohata teaches the device as claimed in claim 1, wherein the new defect management area include a range of physical address in a part of the track originally

assigned to the at least one user data area, in particular the part of the track being a free space in the user data area **(column 9:23-34).**

Regarding claim 6,

Ohata teaches the device as claimed in claim 1, wherein the device comprises a contiguous recording detection unit for detecting a series of blocks having a continuous logical address range to be recorded in a corresponding allocated physical address range **(column 10:19-24, 44-47, and column 13:8-20),** and the new defect management area is outside the allocated physical address range **(see, column 13:40-50).**

Regarding claim 7,

Ohata teaches the device as claimed in claim 6, wherein the contiguous recording detection unit is for detecting a continuous recordings indicator in a recording command, or for detecting the series of blocks representing real-time information, or for detecting file system information for detecting that the series of blocks constitute a file **(Ohata teaches a device for use with conventional optical discs having data thereon or requiring data to be written thereto, in which case user data areas having data written therein will be indicative of continuous recordings as claimed).**

Regarding claim 23,

Takahashi teaches that the new defect management area **(Fig. 7 shows DMA0)** is followed by a free area **(DMA1 – DMAn, fig. 7),** said free area being an area free to be assigned as a new defect management area **(see "DMA1" through "DMAn" per [0043]-[0044]; Fig. 7).**

Response to Arguments

5. Applicant's arguments with respect to claims rejected in the Official Action mailed 9/24/2010 have been considered but are not persuasive.

6. In the Appeal Brief filed 05/20/2011, The Applicant alleges that Sims fails to teach "assignment means for adapting the assignment information depending on a detected defect, detected during recording, by creating a new defect management areas having a starting physical address near the detected defect, wherein the new defect management area is preceded by a user data area." However, In response to applicant's arguments against the references individually (Sims), one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

7. The Applicant alleges that Takahashi fails to teach creating a new defect management area, as claimed. Specifically, Applicant states,

"That is, the DMA's in the Takahashi storage medium are already present, as shown in FIG 1, and no new DMA is created when defects are detected. Rather, a different pre-existing DMA is used, where this different pre-existing DMA is referred to as new DMA in Takahashi since it is different than the currently used DMA. Thus, the so-called new DMA in Takahashi is a pre-existing DMA and is not newly created. As the so-called new DMA in Takahashi is pre-existing, before any defects are detected, then it necessarily follows that the location of the so-called new DMA is not related to the location of any detected defect."

As stated in the claim 1 rejection above, Figure 7 and paragraphs [0043]-[0044] disclose a different embodiment which pertains to a DMA sequence method. The Examiner acknowledges that Takahashi teaches additional DMA areas (DMA1-DMAn) which appear to have been previously allocated on the disc. However the additional

areas are not interpreted as having yet been "created" as no data is stored therein. In support of this interpretation, see paragraph [0043] which teaches that "If DMA0 is a currently active DMA, DMA1 to DMAn are auxiliary DMAs." And Paragraph [0044] teaches that "In an initial state, DMA0 is used, and DMA1 and subsequent DMAs are not used." Therefore, and as stated in the detailed rejection above, since Takahashi teaches the activation i.e., use, creation of a new defect management region (DMA1 – DMAn) when excessive defects are detected in the presently active DMA area, Takahashi is interpreted as reasonably teaching "creating a new defect management areas having a starting physical address near the detected defect, wherein the new defect management area is preceded by a user data area." as claimed.

8. The Applicant argues "As the so-called new DMA in Takahashi is pre-existing, before any defects are detected...the location of the so-called new DMA is not related to the location of any detected defect."

The Applicant's claim merely recites creating a new defect management area having a starting physical address *near* the detected defect. Figure 7 of Takahashi shows that a subsequently used DMA is adjacent to a previously active DMA and is therefore "near" the detected defect, as said detected defect has been found within said presently active DMA area.

9. Applicant's arguments with respect to claims rejected as being unpatentable over **Ohata** in view of **Tokumitsu** and **Takahashi (2004/0057357),** have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DIONNE PENDLETON whose telephone number is (571)272-7497. The examiner can normally be reached on 10:00-6:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dionne H Pendleton/
Examiner, Art Unit 2627

/Wayne Young/
Supervisory Patent Examiner, Art Unit 2627